

## A fossil Lamellibranch from the Permian Lower Beaufort beds near Estcourt, Natal

by

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### SYNOPSIS

*Palaeomutela subparallela* Amalitsky, previously known from the Lower to Upper Permian of Russia and the Permian of Tanzania, is recorded for the first time from Natal.

### INTRODUCTION

Dr D. E. van Dijk of the Zoology Department of the University of Natal, found a fossil lamellibranch in a heap of rubble on the side of the provincial road between Estcourt and Weenen. The rubble appeared to be from a nearby cutting and was being stored on the side of the road prior to being used as material to fill the approaches to a nearby low-level bridge. Miss C. A. Bell, a student at the university, found another during a second visit to the same site, and it is probable that both specimens were derived from the cutting although neither were found *in situ*. The cutting is situated 12,9 km north-east of the point where the road to Weenen branches from the national road near Estcourt; 28°55'24"S, 28°56'15"E. A massive sandstone outcrops in the beds of small streams 23 m north and the same distance south of the cutting; this sandstone is the top of the basal sandstone zone of the Lower Beaufort Stage. At this locality the sandstone is succeeded by some 5,5 m of sandy shale which grades into a metre-thick bed of micaceous sandstone-pellet-conglomerate with many worm-burrows; this conglomerate bed grades back into a sandy shale at least 6 m thick. Mr R. P. E. Morgan, a former officer of the Geological Survey who is now under contract to map this area, states (pers. comm.) that some fossil bones, unfortunately also not *in situ*, have been found in a quarry at a horizon lower than the horizon we are considering, and some 10 km from our locality, which have tentatively been assigned to the genus *Tapinocephalus*, thus confirming that our locality is situated at the top of the basal zone. The lithology of the matrix in which our fossils were found is consistent with an horizon either just below or just above the sandstone-pellet-conglomerate bed.

### SYSTEMATIC DESCRIPTION

#### CLASS BIVALVIA

SUBCLASS PALAEOHETERODONTA N. Newell (1965)

Order Unionoida F. Stoliczka (1871)

Super-Family Anthracosiacea W. Amalitsky (1892)

Family Palaeomutelidae J. Weir (1967)

Genus *Palaeomutela* W. Amalitsky (1892)

*Palaeomutela subparallela* W. Amalitsky

1892 *Palaeomutela subparallela*; W. Amalitsky *Palaeontographica* 3: 164.

1894 *Palaeomutela subparallela*; A. Nechaev *Trud. Obshch. Est. Univ. Kazan* 25: 254.

1932 *Palaeomutela subparallela*; L. R. Cox *Quart. Journ. geol. Soc. Lond.* 88: 627-628.

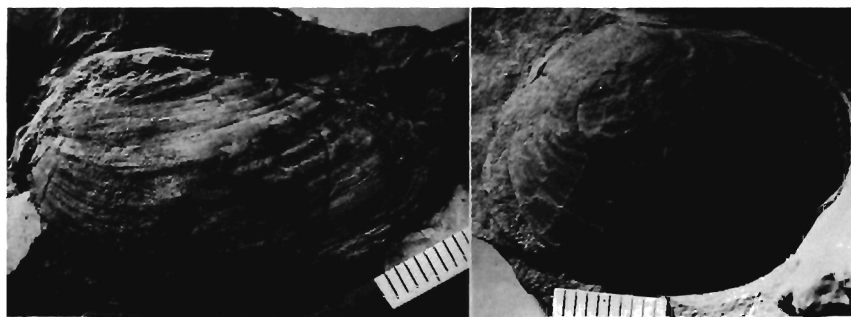


Fig. 1. *Palaeomutela subparallela* Amalitsky. (Photographs by D. E. van Dijk.)

The specimens (fig. 1) now recorded agree well in shape with the figures of the Tanzanian specimens figured by Cox (1932: pl. 39, figs 1–15) but are just over a third greater in size. The larger specimen shows the height/length ratio typical of this species; the smaller specimen is proportionally shorter, a condition not unknown in this species. The umbones are slightly elevated above the postero-dorsal margin and are placed at the anterior third of the length. The ornament, concentric corrugations, is poorly marked. The specimens are unfortunately too poorly preserved to enable a more detailed description to be made.

Dimensions: Length 33,5 mm, height 22,0 mm, thickness 5,0 mm; second specimen 38,0 × 20,5 × 5,5 mm.

Material: Two specimens, Natal Museum.

Locality: Rode Draai No. 803, Estcourt district, SOUTH AFRICA.

Horizon: Karroo System, Lower Beaufort Stage K<sub>3</sub>l, fairly near to the base of the stage.

Discussion: These specimens are larger than the specimens described from Tanzania by Cox (1932: 627–628), and from two to three times the size of the specimens described by Amalitsky (1895: 345) from the Beaufort beds of the Cape Province as *Palaeomutela semilunata*, a species which Cox (1932: 627) considered to be closely related to *subparallela*. They are quite the largest Beaufort *Palaeomutela* specimens which the present author has seen, and at one stage he was tempted to erect a new species to contain them. Modern studies of life assemblages of fossil freshwater lamellibranchs (Eager 1952: fig. 2) show considerable variation in the size and shape of individuals in such assemblages, so the erection of a new species is undesirable.

Cox *et al.* (1969: n413), in discussing living Uniocean assemblages, mentions that individuals collected from hard bottoms are generally shorter and rounder than those found in mud or soft sand, and that the same species may be represented by smooth-shelled individuals in small streams and by populations with more strongly sculptured shells in large streams and lakes. Broadhurst (1959: 523) in his study of *Anthraconaia pulchella* says, 'shell size is shown to be directly related to the organic carbon and detrital quartz contents of the sediment and inversely related to the macroscopic pyrite content'. The present specimens are not a life assemblage; they have been transported some distance before preservation, so a detailed examination of the enclosing sediment would be pointless. The enclosing sediment is a mid-grey, fine-

grained, sandy shale which from its colour contains an appreciable amount, about 2%, of carbon. This carbon could possibly account for the large size of our specimens.

Finally the author wishes to thank Dr van Dijk and Miss Bell for providing him with the specimens and enabling him to undertake this study.

#### REFERENCES

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Date received: 20 November 1974